Roscoe B. Jackson Memorial Laboratory

BAR HARBOR, MAINE

Cable Address
"JAXLAB"

June 20, 1957

Dr.Joshua Lederberg,
Department of Medical Genetics,
Genetics Building, Univ.of Wisconsin,
Madison 6, Wisconsin.

Dear Josh,

Would that all questions were as pleasant to answer as the one you posed about isogenic lines differing only in particular color genes! The construction and utilization of such lines is a business we have gone in for in a very large way. So far I have found no color gene which is antigenic-- all of these isogenic lines are absolutely beautiful tools in physiological genetics because you can so easily make tissue from individuals of one genotype grow in the body of an individual of different genotype, provided you use the proper isogenic combination(either within inbred strain or from inbred strain to its F_1 hybrid). Just for fun I'm sending along a few reprints of articles which have depended upon just such transplantations!

If you are interested in details, we have a long series of coat-color isogenics with C57BL/6: A^y, a^t, c (arose by mutation within inbred strain), Mi^{wh}, W, W^v, Fo (all more than 8 backcross generations, some as many as 33!) plus pa, Va, and ru (in process). There is one standard inbred strain, 129, originally developed by Dunn, which has always been maintained heterozygous for $c^{ch}c$. This has proven extremely useful as a genetic marker in ovarian transplantations, since by making appropriate combinations it is always possible to distinguish offspring from the transplant from offspring of host ovary regenerated. This has been used for many genetic purposes, the one from which I personally have benefited from most being a large series of ovarian transplants made by Dr. Stevens of our laboratory in establishing the exact nature of inheritance of mouse muscular dystrophy, and in building up a supply colony of dystrophics and known heterozygotes. A paper on this has appeared in the May/1 PSEBM(Stevens, Russell, and Southard, PSEBM 95:161-164, no reprints yet available). We have a number of other isogenics, including my long-lived WB, WC, WH, WK. In every case so far tested, tissues have been very histocompatible between the isogenic types.

Now, sir, that you have become involved with Medical Genetics, wouldn't you be interested someday in encouraging a bright student to come play with these beautiful tools? They are really ideal for unravelling gene-action pathways, and for answering loads of other questions. We'd love to have a number of Wisconsin pre- and/or postdoctoral students working here on fellowships from our National Cancer Institute Training grant. Jim Crow has heard something of this story already, and if you really are interested, I'd be glad to discuss this further with you. Our concept for the pre-doctoral student involves a joint sponsorship arrangement, with courses and degree from Wisconsin, but a large part of thesis work carried out here with the mammalian materials and technical advice we have to offer.

Meanwhile, you really should bring your wife and come for a visit here while I'm at home-- didn't you drop in while I was away not too long ago? We'd all love to have you do so any time you can make it.---

Sincerely,

Tibby